

Application No. 10/711,403
Technology Center 1775
Amendment dated April 18, 2006
Reply to Office Action dated January 18, 2006]

REMARKS

In the Office Action, the Examiner reviewed claims 1-17 of the above-identified US Patent Application², with the result that the specification was objected to, claims 1-5, 7, and 8 were rejected under the judicially-created doctrine of obviousness-type double patenting and under 35 USC §102, and claims 6 and 9-17 were rejected under 35 USC §103. In response, Applicants have amended the specification and claims as set forth above. More particularly:

The specification has been amended to update the status of the parent patent application at [Para 2], insert the reference number (26) for the barrier layer of the coating system (24) at [Para 28], and correct typographical errors at [Para 5] and [Para 33].

Independent claim 1 has been amended to incorporate the limitations of its dependent claim 6, namely, the article (10) also has a coating system (14) on its first surface. Independent claim 1 and its dependent claims 2-4 have been amended to identify the coating system (14) on the first surface of the article as the first coating system (14), and to identify the originally-recited coating system (24) on the second surface of the article (10) as the second

² Applicants acknowledge and thank the Examiner for correctly renumbering the claims.

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coating system (24).

Independent claims 1 and 9 have been amended to require that the outermost layer (18) of the first coating system (14) consists essentially of platinum, independent claim 9 has been further amended to require that the outermost layer (28) of the second coating system (24) consists essentially of platinum, and new dependent claims 18 and 20 require that both outermost layers (18,28) consist of platinum. Support for these amendments can be found in Applicants' specification in the table at [Para 33] (in which "CVD Platinum" is the only material identified for the outer coating of specimen CBC-D), and a statement in [Para 29] that the platinum outermost layers (18,28) of both coating systems (14,24) are preferably deposited simultaneously.

New dependent claim 19 requires that the hydrocarbon fluid is a liquid. Support for this amendment can be found in Applicants' specification at [Para 21] and [Para 22].

Independent claims 1 and 9 have also been amended to require that the outermost layer (18) of the first coating system (14) catalyzes the hydrocarbon fluid to form particulates of carbonaceous gum substances suspended within the hydrocarbon fluid, and the barrier layer (16) is sufficiently thick to inhibit interdiffusion between the outermost layer (18) and the wall (12) of the article (10). Support for these amendments can be found in Applicants'

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specification at paragraphs [Para 26] ("hydrocarbon fluid . . . is catalyzed by the platinum layer 18 of the fluid-wetted surface to promote the rapid formation of gum substances"; "gum substances are found in the form of very fine particulate within the fluid"), and [Para 28] ("the thickness of the barrier layers 16 must be sufficiently thick to prevent interdiffusion").

Applicants believe that the above amendments do not present new matter. Favorable reconsideration and allowance of claims 1-20 are respectfully requested in view of the above amendments and the following remarks.

Double Patenting and 35 USC §102 Rejections

The Examiner rejected independent claim 1 and its dependent claims 2-5, 7, and 8 under the judicially-created doctrine of obviousness-type double patenting as being unpatentable over claims of parent U.S. Patent No. 6,808,816, and under 35 USC §102 as being anticipated by U.S. Patent No. 5,545,437 to Nagaraj et al. (Nagaraj). In view of independent claim 1 being amended to incorporate all limitations of its dependent claim 6, which was not subject to either the double patenting or §102 rejections, Applicants respectfully request withdrawal of these rejections.

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Rejection under 35 USC §103

Dependent claim 6 (which depends from claim 1), independent claim 9, and dependent claims 10-17 (which depended from claim 9) were rejected under 35 USC §103(a) as being unpatentable over Nagaraj in view of EP 0304176 A2 to Priceman. Applicants respectfully request reconsideration of this rejection in view of the claims as amended and the following comments.

Because the limitations of claim 6 have been incorporated into its parent independent claim 1, the §103 rejection is treated below as if it were directed to independent claims 1 and 9.

As recited in independent claims 1 and 9, Applicants' invention is directed to coating systems (14,24) for a wall (12) of an article (10) that contains a hydrocarbon fluid. Each of the coating systems (14,24) comprises an outermost layer (18,28) of platinum and a ceramic barrier layer (16,26) between its corresponding outermost layer (18,28) and the wall (12). The hydrocarbon fluid contained by the article (10) contacts the outermost layer (18) of a first of the coating systems (14), and the platinum of the outermost layer (18) is required to catalyze the hydrocarbon fluid to form particulates of carbonaceous gum substances suspended within the hydrocarbon fluid.

Under the §103 rejection, the Examiner explained that Nagaraj (as applied under the §102 rejection) discloses a heat shield for articles such as

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gas turbine engine components, Nagaraj's heat shield includes a coating system that includes a barrier layer 14 and a reflective layer 16 on the barrier layer 14, the barrier layer 14 may be an oxide, and the reflective layer 16 may be a reflective material such as a noble metal (e.g., platinum). The Examiner then concluded

Nagaraj et al. use like materials in a like manner and it could therefore be expected that one surface for a component such as a nozzle insert will be wetted by a hydrocarbon fluid falling within this temperature range.

To the contrary, a nozzle insert is in the hot gas flow path of a gas turbine engine, in which not only are hydrocarbon fluids essentially absent, but the temperature far exceeds that at which carbonaceous deposits would occur, as required by the present invention (see [Para 5]). In other words, Nagaraj does not contemplate nor is concerned with carbonaceous gum deposits. Therefore, Nagaraj does not teach or suggest anything regarding a coating suitable for contacting a hydrocarbon fluid at temperatures at which, according to Applicants' teachings, catalyzation of a hydrocarbon fluid to form particulates of carbonaceous gum substances suspended within the hydrocarbon fluid is even possible.

Priceman was applied for teaching that "forming a coating on either surface of the substrate provides improved life capabilities and resistance to

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failure," from which the Examiner concluded that "it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply coatings to both surfaces of the substrate of Nagaraj et al. with a reasonable expectation of success." However, the teachings of Priceman do not compensate for the lack of teachings in Nagaraj for a coating suitable for an article that contains a hydrocarbon fluid and capable of catalyzing the hydrocarbon fluid to form particulates of carbonaceous gum substances. At best, the combined prior art teaches a nozzle insert exposed to the hot exhaust gases of a gas turbine engine with opposing surface protected with a reflective coating. Therefore, any attempt to arrive at Applicants' claimed invention based on the combination of Nagaraj and Priceman would require modifications beyond that achieved or suggested by the combination.

MPEP §2143.03: All Claim Limitations Must Be Taught or Suggested

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

Applicants therefore respectfully request withdrawal of the rejection of the claims under 35 USC §103(a).

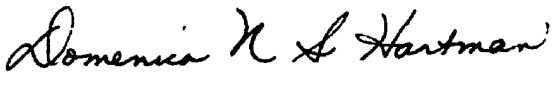
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Closing

In view of the above, Applicants believe that the rejections to their claims have been overcome, and that the claims define patentable novelty over all the references, alone or in combination, of record. It is therefore respectfully requested that this patent application be given favorable reconsideration.

Should the Examiner have any questions with respect to any matter now of record, Applicants' representative may be reached at (219) 462-4999.

Respectfully submitted,

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